

Appl. No. 10/086,554  
Amendment dated June 3, 2004  
Reply to Office Action of April 5, 2004

**Amendments to the Claims:**

Claims 1 and 6 are amended, and claims 3-5 and 31-35 are canceled by this amendment.

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claim 1. (currently amended) A compact, continuous-flow distillation system, comprising:

a housing;  
a double-container boiler vessel in said housing for receiving water to be distilled, said boiler vessel including an outer container having an inlet port for receiving said water to be distilled, an inner container within and spaced from said outer container to form a preheated region between the containers for receiving water from said inlet port, and an inner container inlet port for supplying water from said preheated region to said inner container;

a heater for boiling water in said vessel to produce water vapor in said vessel; a controller connected to said heater for regulating the operation of the heater; a condenser in said housing connected to said vessel to receive and condense said water vapor to provide distilled water;

a storage tank in said housing connected to said condenser for receiving and storing distilled water;

means in said housing for dispensing said distilled water; and  
a noninvasive sensor for controlling the level of water in said boiler vessel,  
wherein said sensor includes a sensor housing, said housing being located outside said boiler vessel and the interior of said sensor housing being in fluid connection with the interior of said boiler vessel[.], wherein said double container boiler vessel further includes a cover for closing said boiler vessel, said cover supporting said heater in said inner container for heating water in said inner container and in said preheated region,  
wherein said inner container is removably supported in said outer container.

Claims 2-5. (canceled)

Claim 6. (currently amended) The system of claim 5, wherein said cover is removable to provide access to and removable removal of said inner container.

Claim 7. (original) The system of claim 6, further including a drain port for said outer container.

Claim 8. (original) The system of claim 4, wherein said inner container includes a peripheral, outwardly extending flange for removably supporting said inner container within said outer container.

Claim 9. (original) The system of claim 8, wherein said cover is removably positioned on said flange to provide access to and removal of said inner container.

Claim 10. (previously presented) The system of claim 1, wherein said noninvasive sensor includes:

a sensor housing having a sidewall and top and bottom caps, said housing being located outside said boiler vessel;

a water line connecting the interior of said sensor housing to the interior of said boiler vessel; and

housing includes a sidewall and top and bottom caps, said non-invasive sensor providing a float switch assembly in said sensor housing responsive to a water level in said boiler vessel.

Claim 11. (original) The system of claim 10, further including a controller connected to said float switch.

Claim 12. (original) The system of claim 11, wherein said float switch is located to detect a lowest desired water level in said boiler vessel, and said water line is connected to the interior of said boiler vessel at a lower end portion of the vessel.

Claim 13. (original) The system of claim 11, wherein said float switch assembly includes upper and lower switches responsive to corresponding water levels in said boiler vessel, each of said switches being connected to said controller.

Claim 14. (original) The system of claim 13, further including a water inlet line connected to supply water through the interior of said sensor housing to said water line to the interior of said boiler vessel.

Claim 15. (original) The system of claim 13, further including a controllable valve in said water inlet line, said valve being connected to said controller for operation in response to at least one of said switches.

Claim 16. (original) The system of claim 13, further including a water inlet line connected to supply water directly to the interior of said boiler vessel, and a controllable valve in said water inlet line.

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Claim 17. (original) The claim of claim 16, wherein the valve is connected to said controller for operation in response to at least one of said switches.

Claim 18. (original) The system of claim 13, wherein the interior of said sensor housing is vented to ambient atmosphere.

Claim 19. (original) The system of claim 13, wherein the interior of said sensor housing above water level is connected to the interior of said boiler vessel above water level for pressure equalization.

Claim 20. (original) The system of claim 13, wherein said upper-level switch is located to maintain a selected water level in said boiler vessel by controlling the operation of said valve.

Claim 21. (original) The system of claim 20 wherein said upper and lower level switches are located to detect maximum and minimum water levels, respectively, in said boiler vessel.

Claims 22-35. (canceled)